COMPUTER WARS THE GAME OF THE 80'S

What's more exciting than a game of MunchMan, more deadly than Space Invaders, and has more excitement than either Adventure or Tunnels of Doom? It's "Computer Wars."

This new high stakes game is not yet available on tape, disk, or Solid State Module, but in the prototype version that we have been watching, our feeling is that it certainly has a great deal of potential.

Computer Wars includes all of the things that make up a great computer game. It has great graphics, can be played from the keyboard or using joysticks, and has only one level of play, Super Intense. The documentation, like most other computer games, is poorly written and full of mistakes. The rules, however, are great! You can cheat, lie, break promises, not deliver product, and stab your best friend in the back, all without losing a point. Extra points are awarded for pre-announcing your products 6 months to a year in advance, poor quality control, least amount of after sale service, and changing your mind.

In version 1.0 "Computer Wars" is a three player game. All three are large American companies and one of the objects of the game is to either keep it that way or eliminate the other two participants. Additional scoring is given to each player who can buy the most foreign components and assemble them in the U.S., without having the component manufacturers go into competition with them.

The game begins with each player selecting pawns from the "Job Pool." Each player can have all of the electrical engineers he wants; they work cheap. Next, they pick a Madison Ave. type advertising agency. Finally, they pick their choice of Marketing manager, usually young but balding. The next stop is the bank. Each player can have several million dollars from the bank, and depending on his successes, he can always go back for more.

The screen now goes blank, as the total objective of the game is about to be revealed.

> Remove as much cash from John Q. Public's pocket as possible, and still leave a smile on his face.

Phase one now begins. Each player is told that he must design and build a personal computer. The rules state that none of these computers can be compatible with each other, and that all must have different keyboards. Additionally, each console must contain at least 2 keystroke functions that will drive the final end-user totally insane. Design changes can be made at any time during the game, and extra points will be awarded to any player who makes hardware or software products sold obsolete within

the first 2 year of production. Of course, no trade-in allowances will be made on any product which becomes outdated.

As we move on in the game we are currently watching, all players have now completed engineering and test market stages. All seemed, to this observer, to have made a few mistakes already. Player #1 has bundled his system with the console and monitor cost at over $1000. Much too high for Mr. Public's wallet. Player #2 has a weird type of keyboard in that the keys do not move. Player #3 is also overpriced with his first version, but is planning a lower priced model, and is conserving his advertising budget for a big push when it is announced.

As the game progresses, all three players can see the real potential of the market place. Educators are falling in love with their products, and a whole new cottage industry is born. Player #1 has now announced an all new keyboard, and also reduced the price of his unit. His sales are climbing, and his Solid State Speech is the best in the industry. Player #2 has the best space game in the business, and is getting a lot of third party software help. Player #3 is gaining in sales with his new model, and looks like he can now challenge the leader.

Player #3's next turn puts him in front. It seems that he has now hired a interplanetary space captain to do his TV ads, and has scored extra points with false and misleading print advertising. His marketing staff has been working overtime romancing some of the nation's largest retailers, and it is really paying off. On player #2's turn, he announces that he has acquired the rights to the nation's top arcade game and is moving up in the . . . . Pac man. Not to be outdone, player #1 plugs in his Video Graphs Module and designs a new Expansion Box to replace the train of peripherals which is now stretching almost 4 feet to the right of his console. (Extra points are awarded for the pre-announcment.)

Several more screens scroll by as each player introduces new hardware and software products. All three players by now have their margins so low that the retail computer stores have thrown them out, and they are now selling their products through mass merchandisers and mail order houses who know nothing at all about the product. Each player is awarded bonus points for lack of after sale support.

It's now Player #1's turn again. He hits a few 'CTRL' keys and the screen changes into all of its 16 colors. What's this, I think...a console lock-up! Is he using an old version of Extended Basic? Then it happens! In full screen size letters the word "WAR"
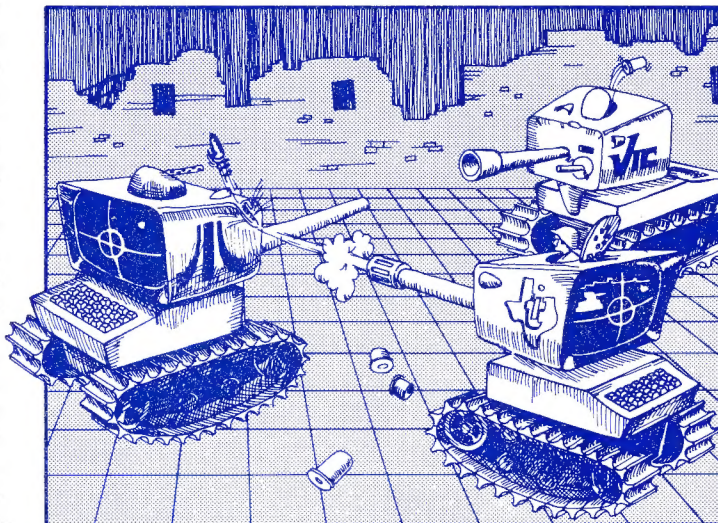
appears. From the Solid State Speech Synthesizer we hear "Today we are pre-announcing (for the extra points) a $100 consumer rebate." The war is now on! It seems that Player #1 has convinced most of its retail outlets that if they loose money selling the console (extra points also awarded for this) they can make it up by selling software modules, which are involved in a new promotion. Of course, as the only manufacturer of these modules, they have hundreds of profit points in them which they would never consider sharing with their dealers or consumers.

Player #2 and #3 are confused! What should we do? Player #3 makes the first move into the WAR ZONE. Convinced that he has more margin in his product than Player #1, and that Mr. & Mrs. Public won't understand that 4K is less than 16K, he also lowers his price. On Player #2's turn he decides that he has more margins in software than hardware, so he will offer FREE game and household management software as an incentive to buy his machine. (Player #2 has got problems with other product lines, and is currently laying off employees.)

With the battle lines drawn and strategies in place, it's now time to turn control over to the internal RAM. They have done all they can at this point, and with Starship Captains Jello Salesmen and Ronald McDonald supplied with new scripts and pockets full of cash, it's time to dig in for the winter battle.

Who will take hill $$$ between now and Christmas is anybodys guess, but it looks like it's going to be an interesting battle.

Suggested Retail Price for "Computer Wars", around 50 million dollars.

TI Offers Rebate

Texas Instruments will be offering a rebate on its 99/4A home computer, a move which Wall Street analysts are calling bold and aggressive, as manufacturers of personal computers vie for market share in the burgeoning industry.

The rebate will be in the form of a $100 check from Texas Instruments to each person buying a TI 99/4A computer between September 1, 1982 and January 31, 1983.

In a telephone conversation with Michael Krasko, a computer analyst with Merrill Lynch, he told a Users-Group staffer that "A move like this for TI at this time could well move them into the top position in the market place if they are able to supply the product." Other analysts we talked with, however, feel that this was a must move for TI, who was loosing valuable shelf space to the VIC 20 and the Atari 400, at a time when they needed it most. In a recent survey conducted by one computer analyst, who contacted six of the first

mass merchandisers in the U.S. to carry all three computers at one time found:

a) **Toys R Us** carried all three products in each of its 120 stores, and acknowledged that the VIC 20 is selling best; Atari second.

b) **K-Mart** initially put all three home computers in 200-500 of its 1,900 outlets. It recently decided to put the VIC 20 in an additional 500 stores.

c) **Woolco**, after a 10-20 store test for each of the three companies, chose to put the VIC 20 and Atari 400 in all 320 of its stores.

d) A fourth retailer, **Montgomery Ward**, has chosen to go exclusively with the VIC 20 in its Christmas catalog, which next month will be mailed to over 4 million customers.

This study, however, was done prior to TI's rebate offer.

We see TI's bold move as having several long term implications in the market place.

1.) The establishment of a low price so early in the products growth cycle will discourage potential new entrants, including the Japanese, in this billion dollar industry.

2.) Due to the necessity to stock large amounts of software and perhiperal products for each brand carried, mass merchandisers will continue on with only the leading brand.

It's hard to say who the smart money people are betting on at this time, but we think that TI can pull off a great come-from-behind victory if they can get their act together.

HARDWARE
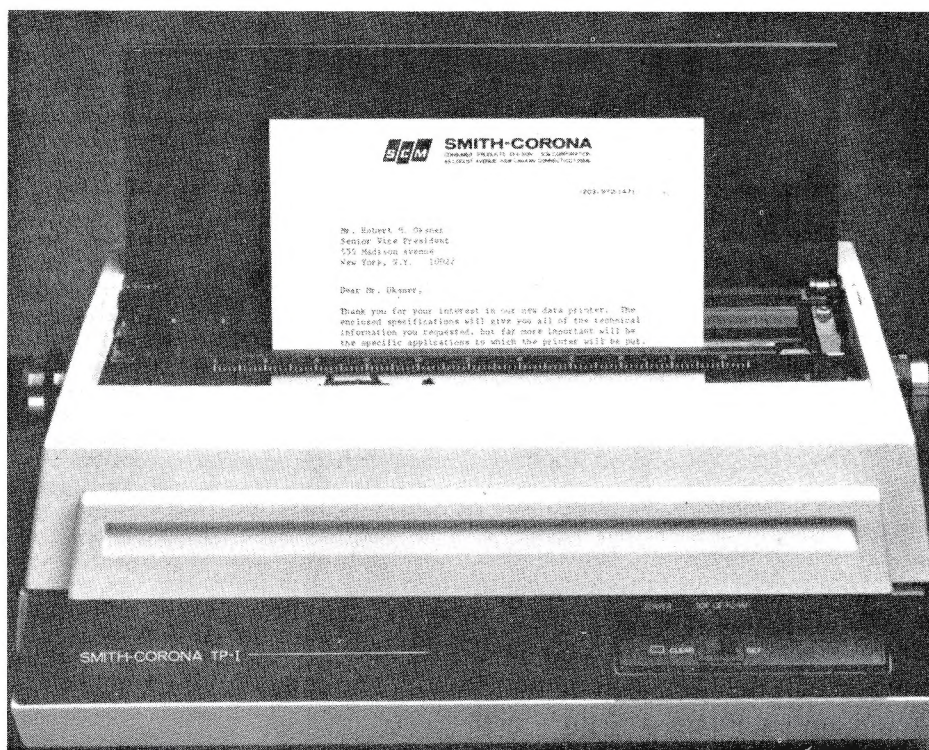
Smith Corona TP-1 Printer

Recently our distributor supplied us with the new Smith Corona TP-1 Letter Quality printer for our tests and evaluation. The TP-1 is a micro-processor controlled daisy wheel printer. It's

designed to be compatible with most computers which are now being marketed.

The TP-1 is available in two print format versions: 10-pitch, which gives you 105 characters per line, or 12-pitch, which gives you 126 characters per line. The TP-1 is available either in a Parallel

or RS232 Serial Interface model.

The TP-1 uses the same print wheel as those in Smith Corona Typetronic typewriters; it, however, cannot use multicolor ribbons. Ribbons are available in either single strike Mylar film or nylon fabric.

The printing speed of the TP-1 is approximately 12 characters per second. Our tests revealed speeds of between 12.4 and 10.2 characters per second. One of the disadvantages that we found when using the TP-1, is that it provides only friction feeding of single sheet paper, so use of continuous form paper is discouraged. The documentation that was provided with the TP-1 is excellent. It came to us with a 36 page operators manual, which was clearly written in everyday English. The manual has lots of line-drawings which show close-ups of the TP-1 with arrows pointing to appropriate switches and settings.

"Our overall impression this is an excellent buy."

An additional draw back is that the printer was not set for immediate operation with the TI RS232. Rather than trying to interface the TP-1 ourselves, we called our old friend Pete Cookman at Denali Data, and asked him if he would like to build our cable and set the appropriate dip switches. In less than two hours, we received a telephone call from Denali, and Peter informed us that he had it up and running.

Our overall impression of the TP-1 is that those of you who are interested in a low cost letter quantity printer, and are willing to sacrifice some print speed, this is an excellent buy.

We have arranged through our distributors to offer the TP-1 to all of our members at the following prices: Regular membership price is $670.00, and President's Club price is $620.00.

This price is for the serial version, and does not include the appropriate interface cable.

Let's Talk Printers

After you have had your 99/4 for a few months, one of the additional investments you may want to make is a printer. Printers, for the most part, do not obsolete as easily as computers. This means that the same printer that will

work on your 99/4 will also work with an Apple or other computers with little or no changes.

Keep in mind that since TI has discontinued their Thermal Printer (not much of a loss), any printer you choose will have to rely on its input coming from either the old style RS232 box peripheral or the Perhiperal Expansion Box and the component RS232 card. If you choose the old style RS232 box, you can send data to the printer only in a Serial form. As most printers sold today come standard as Parallel, (Centronics), this would mean that you would have to purchase an additional RS232 serial interface for the printer as well. This will drive the cost of most printers up by about an additional $125. We prefer to use the serial port hoping that we can some day use the parallel port to drive a hard disk for our 99/4A system, but that's another story in itself.

For the type of work that most 99/4 owners will do there are two basic types of printers available: the Dot Matrix and the Letter Quality.

The Dot Matrix is the most popular type of printer for home use. Essentially, it uses a combination of very tiny wires which strike an inked ribbon, and thus leaves an image on the paper. The greater the number of wires, the greater the clarity and quality of resolution are. Most printers today are 7X9, which means 7 horizontal rows of pins, nine deep.

Many of the Dot Matrix printers sold today also offer several features that most home users really like, such as, graphic characters, double-strikes, super and sub-script, (larger than and smaller than normal characters) underlining, and so on. These options can either be set at the printer through a series of dip switches, or controlled by the user via program statements. Dot Matrix printer speeds range from 80 to 400 cps (characters per second) and come in uni - and bidirectional models. Normally, the higher the cps, the higher the cost of the printer.

"For the type of work that most 99/4 owners will do there are two basic types of printers available"

The second type of printer, the Letter Quality, is designed to produce documents that are indistinguishable from

those produced on a typewriter. The advantages of the Letter Quality printer is that the user gets the final output in a format that is acceptable for any business communication, while maintaining the productivity advantage generated by a computer word processing system.

Letter Quality printers were initially very expensive, but today they can be found in the $1000 to $3000 range, depending on the options you want. One new Letter Quality printer, the Smith-Corona TP-1 is selling for under $600 in some parts of the country. (See our review in this newsletter. Printing speeds of Letter Quality printers is somewhat slower than those of a Dot Matrix, 20-50 cps, but the overall quality of the final document makes up for this loss of speed.

Almost all of the Letter Quality printers use a printing element called a daisy wheel. This flower shaped wheel contains characters on its outer edge that are struck one at a time by the print hammer as the wheel moves in a circular motion to the desired character.

No matter which type of printer you decide on there are several things that you should do before you make your final decision to buy.

a) Find out if the dealer has ever interfaced the printer you are purchasing with your type of computer. If not, find one who has, or be sure to take your computer to his place of business and make sure that he can make it run before you part with your cash.
b) Can the dealer supply the correct cable required to interface your RS232 with the printer? (All cables are not alike.)
c) Can the dealer help you set the dip switches properly to assure correct handshaking?
d) Find out where you can get it serviced if need be, and remember that Japan is a long way away.

The Plus & The Minus Of Graftrax Plus

By Guy-Stefan Romano,
San Francisco, CA.

When I first set out to write this piece, it seemed a rather simple and straightforward thing to do; namely, to supply the reader with some simple information about the difference between Graftrax Plus and the Epson printer without it. But after spending much time talking to TI and Epson (it was a bit

like trying to get the same answer from 44 different IRS agents on the phone) now *I'm* confused!!!

Therefore, I am going with my first-hand experience rather than with the hodgepodge of information I have been able to gather together (almost all of it conflicting!!!) If you own an Epson printer that is 6 or more months older you most likely do not have Graftrax PLUS (don't confuse this with "regular" Graftrax) and you are blissfully happy with what you own. You have a wonderful printer with many features, some of them more useful than others depending on your particular needs. For example, you have a full built-in set of Japanese Katakana characters (probably not too often used by most Americans). You also have a nice (limited, but still nice) built-in set of block graphics that are relatively easy to play around with. More important is the fact that this graphic set, having been there all along, was used to write countless programs that are enhanced by them.

Confused point #1 — According to Epson, the newest Epson MX80 does NOT come with Graftrax (neither Plus nor "regular"). It is available as an "extra" that may be added. The newest MX80/FT and MX100 come with GRAF-TRAX PLUS as a standard item and nothing else is supplied. Consequently, we now have old Epsons AND new Epsons AND Graftrax AND Graftrax Plus. Add to this the fact that some retailers are trying to sell old Graftrax as the "new" Graftrax Plus and you see the salad we are starting to toss up. But wait TI is not yet mixed in!

Confused point #2 — In talking with people at TI, I was told that the soon-to-be-available custom TI version of the Epson is to be the MX 80 (not the MX80/FT). I then asked if the new TI printer would be coming with Graftrax Plus as a standard item. "Maybe" was the reply but also "maybe" with the regular Graftrax or "neither"! We'll have to wait and find out just like the people at TI!!!

So why the fuss, you may want to know. Well, to reiterate and concatenate, with the new Graftrax Plus you get a new whopper collection of goodies like, underlining, Italics, superscripts and subscripts (to name a few). AND the wonderful world of bit graphics (a near ultimate in flexibility for complex graphics design). Wonderful, that is, *IF* you are going to do a lot of pictures on your printer and the like.

What you lose with Graftrax Plus,

however, it that Katakana set (no great loss for most) AND those block graphics I mentioned in the beginning. The block graphics set has been replaced by the Italics character set. How do you get those convenient graphics characters back? You write a whole program to define each one BIT-BY-BIT, that's what you do!!!! What used to be one keystroke is now a rather agonizing programming job that takes lots of time and effort (and LOTS of memory). Try running Users Group program #8009 or #2153 and see what you get!!

"Each individual must decide for himself what features he most prizes."

Each individual must decide for himself what features he most prizes and then adjust his actions to them. If you are heavily involved in graphics programming or you are going to be doing a lot of word-processing using many "fancy" print features that you can't do without, then you need Graftrax Plus. Otherwise, you may be quite happy without it. In any case, check programs you have to see if they use the old block graphics before splurging on a newer Epson. You may not be able to run them and get the desired results (and there is no easy way to reprogram them for graphics!!)

This is perhaps one of those cases where older is better. If you have an older Epson you can buy an Epson Graftrax Plus retrofit kit inexpensively and then (although it is a bit tedious) change back and forth by removing the new chips and putting back the old one and have the most flexibility.

One last word, be careful when buying the retrofit kit, as I mentioned earlier some retailers are still trying to set off their "regular" Graftrax as Graftrax Plus (usually at some "really special deal"). Buy from someone you can trust! Also be very sure that you are given the new manual for the retrofit kit since all the switch setting must be changed.

EPSON
EPSON AMERICA, INC.

Dual-Sided Disk Drives Now Available

As we reported in a previous newsletter, the new Disk Controller Card (PHP1240) is capable of controlling a 5 1/4" double-sided, single density disk drive. Although the Disk Manager command moudle, which will initialize both sides of the disk, is still not available, we here at the Users-Group thought that it would be interesting to put a dual-sided drive in our newly acquired Expansion Box.

After installing a Tandon TM100-2 bare drive in the box, we were pleasantly surprised to find that we were able to initialize our single-sided disks with the current Disk Manager module, which is packed with the Controller Card.

Further investigation on our part revealed that though not yet available p-Code software, we were actually able to initialize and use both sides of a double-sided disk.

Those of you who are planning or who have already purchased the Peripheral Expansion Box should seriously consider a dual-sided drive for your P.E.B., as the cost differences compared to the amount of storage space available is quite significant.

"Seriously consider a dual-sided drive for your P.E.B."

The Tandon TM100-2, which we are currently using plugged directly into the Disk Controller Card, is secured in place by the screws provided by TI, which are also packed with the Disk Controller Card.

Due to our success in successfully interfacing the TM100-2, we will be offering to our members at the following prices: Regular member $315.00, President's Club member $298.00.

International 99/4 Users-Group

POTPOURRI

Attention President's Club Members

Recently we sent each of you a catalog of additional products which you may now purchase from the International 99/4 Users-Group.

These products are supplied to us through an arrangement with a major distributor we deal with. All products in this catalog are inventoried in Kansas City, as well as most of the TI merchandise we sell. All product is shipped from Kansas City with either the distributors packing slip or our invoice.

This unique arrangement will in no way interfere with our normal duties here at the Users-Group, and is simply offered as an additional benefit to our President's Club members.

All prices listed on pages 50, 51, and 52 should be disregarded. Pricing for these products are reflected on your special (GREEN) President's Club price list dated July 1, 1982.

We hope that all of our President's Club members enjoy this valuable new service and that you will use it to your benefit.

Teachers College Teaching Logo

The Micro Computer Research Center, located at Columbia University's Teachers College in New York City, is currently utilizing eleven 99/4's to teach both LOGO and Basic teaching skills to their students.

Ursula Woltz, the center's assistant director, informed us that starting this fall the Teachers College will be offering a course in the Masters program on computers in education on how to teach LOGO in schools. In addition, during the summer months the college offered a course for both students and parents covering both Basic and LOGO procedures. Another program has been aimed at gifted children between the ages of 7 and 15 who have had no computer experience.

In our conversation with Ms. Woltz, you could tell by her enthusiasm that there is a total dedication to the proper teaching techniques which are required for courses of this nature. Ms.

Woltz stated, "We currently have no more than two people working with any computer at one time." This allows the optimum amount of creativity for each individual in the class. She also stated that although TI's new LOGO curriculum guide is well written, it stops short for pupils who would like to learn advanced theories and procedures. I agree with her statement, and both of us feel that with the concerned interest of major textbook publishing companies, that additional curriculum guides will soon surface.

At this time, the inability of the 99/4 to perform networking functions (multiple consoles supplying data to a single disk storage system) is severely limiting classroom usage of the 99/4A.

For members who live in the New York - New Jersey - Connecticut tri-state area who would like additional information on upcoming seminars to be held at the Columbia Teachers College, please write to:

> Ursula Woltz
> Box 18
> Teachers College
> Columbia University
> West 120th St.
> New York, NY 10027

UCSD Pascal Users To Form TI Special Interest Group

DALLAS, TX -- A special interest group (SIG) for Texas Instruments (TI) computer users operating the UCSD p-System will be formed at the national meeting of USUS here in October, according to Robert W. Peterson, president of USUS (the UCSD Pascal System User's Society).

The SIG will include users of the TI 99/4 Home Computer, produced by TI's Consumer Products group, the DS990 and Series 200 minicomputers, produced by the Digital Systems group, and the TM990 from the Semiconductor group.

"Any TI user who intends to do his own programming and wants to utilize our extensive software library can benefit immediately from membership in this group," Peterson said.

The USUS software library has more than 45 minifloppy diskettes of source programs for the 99/4, including applications, development aides and games, complete with documentation. For the other TI computers, the library exists on 15 eight-inch diskettes.

> ## *"....library has more than 45 minifloppy diskettes of source programs for the 99/4"*

"This SIG will allow members to share common problems and solutions and will serve as a clearing house for information relating to implementation, optimization and the use of the p-System on Texas Instruments computers," he continued.

The USUS meeting will be held October 29-31 at the Harvey House Hotel in Dallas. It will feature tutorials on the p-System, technical presentations, software exchange, an expert user panel and hardware and software demonstrations as well as special interest group meetings.

USUS (pronounced use-us) is the international user's group for the most widely used machine-independent software system. Based on software developed at the University of California at San Diego, the UCSD Pascal system now has compliers for FORTRAN, BASIC, LISP, PILOT, Ada and Modula-2. Originally developed to facilitate software portability, the UCSD p-System now has more than 10,000 users and is capable of running on nearly any computer.

USUS is the principal source for education and exchange of information about the UCSD Pascal system, the society promotes and influences its use and development.

Representing TI users, the group has already established direct channels of communication with Texas Instruments and with SofTech Microsystems, which sells and supports the p-System under license from UCSD.

Membership in the TI SIG is open to any USUS member. Electronic mail communication made available to members by USUS and the quarterly newsletters will allow SIG members to remain in close touch with the TI SIG and USUS activities.

Individual memberships in USUS are $20 annually. Applications are available at the meeting or from the USUS Secretary, P.O. Box 1148, La Jolla, CA 92038.

New Assembly Language Guide

In our May Neweletter, we informed our members of the availability of a useful guide to learn 9900 assembly language. We have recently been informed by Texas Instruments that "Introduction to Microprocessors" has been discontinued.

For those of you who currently have, or are considering purchasing, the Editor/Assembler command module or the Mini-Memory command module, you would be well advised to consider purchasing two new books written by the staff at TI. These two books give a complete guide to the TI 9900 family of compatible microprocessors. They are an ideal tool for application design and programming activities. The text can be useful to a wide variety of computer users, including electrical engineers, programmers, and technicians. You can study and master software only, hardware only, or software and hardware together. Each reference manual is designed as a stand alone teaching tool with practical exercises.

Microprocessors, Microcomputers, and System Design

Staff of Texas Instruments Incorporated - 534 pages
Shipping weight 3 lbs. 5 oz. - $26.95 -Hard cover

Fundamentals of Microcomputer Design

Staff of Texas Instruments Incorporated - Approx. 500 pages - Shipping weight 2 lbs. - $15.00 - Soft cover

Prepaid orders for both of these useful manuals can be sent to:

Texas Instruments, Inc.
P.O. Box 3640, M.S. 84M
Dallas, TX 75285

Contest Winners Announced

The following members were recent winners in our Spring programming contest.

Extended Basic Program

Melvin Rosenfeld
Santa Barbara, CA
Program: SHRINK

Basic Program

Gerald Heine
Galt, CA
Program: PIGGY BANK

Both Mr. Rosenfeld and Mr. Heine will receive a Peripheral Expansion Box compliments of the International 99/4 Users-Group. Second place winners of Mini Memory command modules are:

Extended Basic Program

Gregory Groszek
Whitesboro, NY
Program: ALIEN DEFENDER

Basic Program

Sam Moore
Sherman, TX
Program: MOTHER GOOSE

We would like to thank everyone who participated in our contest, and we'll start a Fall contest in October.

PROBLEMS

Master Tape Adjustment

It has been brought to our attention that several of the Master Tapes in the Graphics and Demo section of our Software Exchange Library were miss numbered. This problem has now been solved, and anyone who received erroneous tape or disk copies, please return us a copy of your original invoice and we will make the necessary corrections for you.

We are extremely sorry for any inconvenience this may have caused any of our members.

Editor/Assembler Manual Errors

Several members have brought to our attention that many errors have been found in the Editor/Assembler Manual produced by Texas Instruments. One user has reported up to 65 errors found so far. Many of these errors are very DANGEROUS in programming nature, and contain several false addresses. One user reports that one complete page of instructions is a duplicate, and one other page is totally missing.

We are not sure how you can obtain a copy of revisions at this time, but you can try writing TI direct at:

Customer Relations
Texas Instruments Inc.
P.O. Box 53
Lubbock, TX. 79408

Keyboard Problems

Scores of our members are reporting that they are experiencing keyboard problems with their 99/4A's. Two of the most common problems are sticking keys and keyboard bounce (when you hit a key and it repeats the letter more than once.)

Do Not try to fix these problems yourself!

Whether or not your console is in warranty, return it to a TI service center for repair. In most cases we have heard of, the problem will only get worse.

If your console is still under warranty, TI will replace it at no cost. If it is out of warranty, there will be a service charge of $40 to $45.

Warranty on P.E.B. Products

Many of you who are purchasing the new Perhiperal Expasion Box and its component cards are receiving them from dealers one piece at a time through no fault of your own. Delays in production and shipments have meant that you may have had an RS232 card or 32K Ram card weeks before the actual delivery of your P.E.B. Many dealers, such as ourselves, have invoiced you on the actual date ordered, instead of the date shipped. (We included a packing slip with shipping date.) So, on what date does the actual warranty period begin?

I personally have called TI 6 times to get an answer to this problem, and have come away all 6 times without a definite answer. **TI has always in the past been very good about honoring the warranty on their products, and we see no reason to believe that they will not work with consumers who have this problem.**

"Let's Hope They All Stay Healthy!"

The major problem we see at this time, is where do you go to find replacement goods? We called 4 TI service centers and asked if any replacement product was in stock, and was surprised to find that none of them have even seen P.E.B. products, let alone have replacement stock. All of the dealers we have talked to have said that they have not had enough product to satisfy demand, so are not maintaining any inventory for faulty product. LET'S HOPE THEY ALL STAY HEALTHY!

Warning!!

Those of you who have recently purchased the new Peripheral Expansion Box, or intend to purchase one in the near future, please be advised that the warning sticker located on the rear of the Peripheral Expansion Box, and the warning statement on page 5 of the Operations Manual is NOT to be taken lightly!

The warning to wait two minutes after turning off the unit before either inserting or removing one of the component cards means exactly what it says.

We have already heard of several cases in which an owner has damaged one of their component cards by either inserting or removing it without waiting the allotted time.

Although, generally speaking, the user cannot detect damage caused to his unit by this procedure, TI's engineering department can readily spot power surge damage with quick and reliable results. TI has informed us that users who return cards that are damaged in this fashion may jeopardize their warranty rights.

SOFTWARE

Hidden Statements In Extended Basic

Recently we have found some interesting things when using the Extended Basic with the 99/4A console. For instance, try this:

```
10 FOR A=1 TO 100
20 PRINT A
30 NEXT A
```

Let's count the keystrokes...39. Now type LIST. What we get is an exact echo of the program we typed in above. Now let's try something a little different. Type in the following: (For the purpose of the indication of when to hold down the control key and type a letter, we will use the following symbol: "@". This would mean if you see @C, you would hold down the control key while depressing the letter C on the keyboard.)

```
10 @L (enter)
20 @; (enter)
30 @V (enter)
```

Now type LIST. Your screen should read:

```
10 FOR
20 PRINT
30 NEXT
```

Now let's take this series a step further. This time let's use our old friend the REM character (!) and type the following: (Don't forget when you see the @ you must depress the control key as well as the key indicated.)

```
10 ! @L A=100 (enter)
20 ! @; A (enter)
30 ! @V A (enter)
```

Now type LIST. As you can see, you now have our original program on your screen proceded with (!), the REM statement. If we were to remove the (!) REM statement either manually or by using a program to do so (this can be done with

"TI informs us that this was not their original intention for these functions."

a disk system only), and type RUN, the program would execute in the same way that our original program did.

Although TI informs us that this was not their original intention for these functions, and that they do not recommend this type of programming method, we have used it in several programs and find it to work quite well.

For your convenience we have listed all of the hidden statements and the keys to make them operate.

Try working with this yourself. If you find any other uses we missed, please let us know.

1 (TO)	2 (STEP)	3 (,)	4 (;)
5 (:)	6 ())	7 (()	8 (OPTION)
9 (OPEN)	0 (THEN)	= (CALL)	Q (UNTRACE)
W (READ)	E (GO)	R (INPUT)	T (RESTORE)
Y (DELETE)	U (RANDOMIZE)	I (DEF)	O (UNBREAK)
P (TRACE)	\ (AND)	A (ELSE)	S (DATA)
D (IF)	F (GOTO)	G (GOSUB)	H (RETURN)
J (DIM)	K (END)	L (FOR)	; (PRINT)
K (REM)	X (STOP)	C (!)	V (NEXT)
B (::)	N (BREAK)	M (LET)	> (ON)

Reading Roundup

The Reading Roundup Module provides instruction and practice in three reading skills: figures of speech, work meanings, and idioms. While the stories are written simply enough to be read by a student in third grade, the skills are sophisticated enough to challenge a sixth grade student. The module could be used to provide remedial help for a student in Junior High School without making him feel that he must read juvenile material.

Two activities are provided for each skill. The "Study It" activity provides instruction through examples presented in a colorfully illustrated story. The student's rate of reading will not be a factor contributing to his success or failure at learning the skill. He is allowed to pace himself, pressing "Enter" when he has had ample time to finish reading the material on the screen. In the "Study It" activities for each skill, the student is given opportunities to respond, but scores are not tallied. A correct response causes an appropriate signal such as "Right" to flash on the screen. The signal is accompanied by a catchy melody. Incorrect responses result in an opportunity to make a second choice or, by pressing "Aid", to reread the material and then try again. A second incorrect response causes the correct answer to be shown to the student. The student is allowed to learn to improve his reading skills without fear of failure when he makes a mistake or is learning by trial and error.

The "Try It Out" activity for each skill contains paragraph length stories and allows the student to type in a character's name, thus personalizing the stories for him. The name will appear in each of the stories in the activity. At the conclusion of the activity, a score is shown.

The figure of speech taught in Activities 1 and 2 are similes and metaphors. Both are used to show comparisons and are common literary techniques used to cause the reader to form a mental picture. Similies use the word *like* or *as*. Examples of similies are:
1. He is *as* gentle *as* a newborn deer.
2. The kite soared *like* an eagle.

Metaphors form the comparison without the words *like* or *as*. An example of a metaphor is:
1. What a railroad engine of an ox!

The student is expected to learn to tell what two things are being compared and how they are similar. The words *simile* and *metaphor* are not used in the module.

In Activities 3 and 4, the student is shown how to use context clues to determine the meanings of words that are unknown or have multiple meanings. It is not always possible or even desirable to stop and use a dictionary every time we encounter an unfamiliar word or a familiar word used in a new and different way. The ability to use context clues is an invaluable aid to reading with comprehension.

Activities 5 and 6 give the student an opportunity to learn the meanings of some common idioms that our English language is so full of. "Sitting on pins and needles" is an example of an idiom used to indicate nervousness. Many adults do not realize the difficulty a child can have in understanding the figurative language that he hears and reads. The young child's language is completely literal --- He means what he says, and he says what he means. Since our language makes use of so many idioms, the knowledge of their meanings can result in higher comprehension scores for the student.

All three skills are combined in Activity 7 as a culminating activity.

The four lengthy stories all follow a "Western" theme accompanied by appropriate music in keeping with the title of the module --- Reading Roundup. I highly recommend its use for improving reading skills, particularly by the student in the intermediate grades. (4-6)

Division 1

Division 1, command module created by Scott Foresman and Company for Texas Instruments, will be an invaluable aid in the classroom as well as in the home. Because it is a complete text on division facts, its use will cover a wide range of ages and levels of ability. Division is commonly introduced in grade three, and the facts are reviewed through grade six. Grades three through six, then, are the levels at which this module will be used most extensively. It will also be useful to challenge a younger gifted student and as a remedial tool for those students above sixth grade who have not achieved mastery of division facts.

The nine activities available for selection are:
1. Meaning of Division
2. Divisors of 1, 2, 3
3. Divisors of 4, 5, 6
4. Divide Using $\overline{|}$
5. Practice and Paint
6. Divisors of 7, 8, 9
7. How Many Boxes?
8. Divide With a Remainder
9. Make a Picture

The activities proceed in sequence from least difficult to most difficult. Each activity may be worked independently of all others. However, the ability to work successfully at each activity depends upon the mastery of skills that have been introduced in the preceding activities.

By working through Activity 1, the student will receive an excellent explanation of what actually happens during the division process. This writer has known students who had memorized division facts and still lacked an understanding of the *concept* of division. The explanation on the module is made without using the words "divide" or "division", and without using either of the signs normally used to work division problems.

> ## "The activities proceed in sequence from least difficult to most difficult."

In Activities 2 and 3, the use of the sign $\div$ and the number sentence form are introduced. When the working form is introduced in Activity 4, using the vertical format and the sign $\overline{|}$, the transition is made simple by showing both forms and actually moving each number from the number sentence to its proper position in the new format.

The relationship between multiplication and division is stressed in Activity 6 by showing a "check" in which the divisor and the quotient are multiplied. An incorrect answer causes the complete multiplication table for that divisor to be displayed on the screen.

The concept of remainders is illustrated in Activity 7 by evenly grouping and having "leftovers". The word "remainder" is used in Activity 8 and the working form is shown. The student learns to give the quotient and the remainder.

At the outset of each activity the student may choose to see one or more excellent teaching examples. Exceptions to this are Activities 5 and 9 because they were designed to be check-up activities.

The illustrations on the computer screen are more effective than even very attractive textbook illustrations. The book's pictures are stationary, while items on the screen may actually be repositioned to show the grouping process. The learner receives a simulation of using manipulatives, a concrete approach required by many children before they can proceed to more abstract learning. Through the use of the voice synthesizer, the student hears the equation as he sees what is taking place. The result is that he is receiving information in three modes; visual, auditory, and kinesthetic. By involving all of these senses in the learning process, retention chances are much greater. Division 1 is sure to be a popular and enjoyable aid to learning.

Reading Fun

Reading Fun is Scott Foresman's reading skills module for the younger child in the primary grades. The module contains four illustrated stories accompanied by musical background. At the outset of each story three words that are possibly new ones for the student, are shown on the screen. The child may, by pressing the number next to any of the words, hear it pronounced and see it used in a sentence. When the word appears later in the story, he may receive the same help by pressing "Aid".

The first three stories provide instruction in one skill each. After the child has had several opportunities to respond to questions in a non-threatening way, he is invited to try out what he has learned. He is then given a series of ten questions over some short passages of reading. At the conclusion of the activity, the child's score is shown. If he responded correctly on the second try, he is given credit for a correct answer. He has the opportunity to look at the text of the story again before he attempts to correct his answer.

The first story deals with problems and how people solve them. The child learns to identify the problem from a list of three possibilities. He also selects the solution that was used in the story.

The second skill is labeled "Why things happen." Educators usually refer to it as the ability to distinguish cause and effect.

Thirdly, the child learns to watch for clues that tell how characters feel. He must know the meanings of some common words that describe people's feelings, moods, and emotions. Some of the words used are: tired, happy, angry, and upset. The answers to some of the questions are stated directly in the story. Other questions such as, "How did Ann probably feel?", require that the child draw some conclusions or use some inference skills.

> ## "Educators usually refer to it as the ability to distinguish cause and effect."

The fourth story allows the child to use what he has learned about all three skills. Questions asked are:

What is the problem?

What caused the problem?

At this point the child is asked to pick one of the three main characters to solve the problem. He is given a choice of three different actions that character might take in attempting to solve the problem. After his choices have been made, he is told, "Now let's see what happens next." The text of the story continues according to the child's choices and he can then see for himself whether or not he has chosen wisely. He may try as many of the nine possible solutions as he desires. By choosing possible solutions to these problems, a child can begin to learn to predict the outcomes when certain courses of action are taken, and to think about the possible consequences for actions that people take.

These and the other skills dealt with in the module are referred to as reading skills. Having mastered them, a child will almost certainly become a better reader. They might be more appropriately named, however, as thinking and living skills.

Educational Programs
Reviewed by: Phillis Peyton
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Personal Computers in Education — Ready To Teach?

The personal computing revolution that has captivated the mind's eye of the news media is supposed to bring America, and even the world, entertainment and education. That the last category is less successful than the first two is illustrated by the ease of naming software suppliers such as The Source or Activision for information and entertainment. Suppliers for home and in-school education are not exactly house-hold words, and that is the problem. Two years into the decade of the personal computer, and education has barely scratched the surface of the home and in-school market. Companies like Scott-Foresman servicing TI's 99/4 and independent Edu-Ware selling to Apple and Atari owners are among those competing for the small pool of dollars available for both computer education and education-by-computer. Currently, it is estimated that computer entertainment, including video games, accounts for revenues in the multi-billion dollar range, perhaps double that of theatrical motion pictures. Computer education, on the other hand, is barely into the hundreds of millions in revenues or less than five percent of what is spent on computer gaming.

The computer as an educational tool is used in two ways: Computer education is the teaching of computer skills in real time with a personal computer. It is, in effect, computer literacy. Education-by-computer uses the computer as a teaching tool for conventional skills ranging from mathematics and grammar to composition, chemistry and foreign languages. The computer can also teach unconventional skills such as aerobic dancing, jogging techniques, etc. The principles of computer assisted instruction (CAI) have been well established through the last two decades in both home and classroom.

> ## "The principles of computer assisted instruction (CAI) have been well established through the last two decades."

There are four issues that currently are of interest in educational computing. These are government involvement, standards, interchangeability of hardware and software between home and school, and the lessons available from the English experience.

There has been a strong push for computers that teach, from the U.S. Office of Education; both to increase the amount of software available and to create more uniform software. Individual school districts, even when working as collectives within one state, do not have the funding or impact neces-

sary to make these kinds of changes. So the current federal proposals could pave the way for nationwide adoption of computerized instruction, and instruction in the use of computers.

A lack of standards is precisely what has kept educational software from tieing the school into the home. The diversity of educational curriculum in use in thousands of school systems all over the U.S. makes coordination with home educational software difficult. That is beginning to change as educational textbook publishers such as Harcourt Brace Jovanovich, McGraw-Hill and Scott Foresman have ventured first into the schools and then into the homes.

One of the biggest drawbacks to computers in the classroom and interchangeability from classroom to classroom to the home is the lack of common hardware. Educators from coast to coast complain that the presence of a multitude of systems prevents software from being interchanged from school to school within a district. Certainly the most popular of the lower priced personal computers provide virtually nothing in common. Radio Shack utilized the Z80A except for their color computer (which is very attractive to schools) which has a 6809 micro-processor. Apple and Atari both use the 6502 chip, but with totally different architectures.

In the same way, the student and his or her parents are forced to ignore the option of take home software unless the same machine is in both the home and school. Worse still, with a student going from the sixth grade in the elementary school to junior high school to high school, three different in-school computer systems may be encountered.

In England, the emphasis on a national computer literacy program has seen the BBC produce a series on the microcomputer along with an authorized, standardized unit from Acorn. This effort by the government controlled and funded "BEEB," has produced a consistent tool for computer education. With some follow through to the schools, it may become a nationwide scheme of computer education.

In America, we are left with what looks like a draw. If Federal activity can break the impass, then it may be the answer. There is a need to provide school districts with commonality; not only for instruction with and on computers but for computer-assisted instruction. Sooner or later, all of these problems will be dealt with and the computer will

join the 16mm projector in every classroom in America.

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Chisholm Trail

An exciting new game command module has just been released by Texas Instruments. Chisholm Trail's graphic design is similar in nature to Tombstone City, however, the action and control features are preferred by this reviewer. The ability to choose nine different levels of play allows the user a wider variety of selection than on any other previous TI module.

The overall object of the game is to drive your herd of space cattle from the southern most portion of the Chisholm Trail to its northern most portion. Mileage is accumulated by eliminating rustlers and wranglers. After you shoot all of the rustlers on any one screen, one day in your journey progresses.

The utilization of machine language graphics in Chisholm Trail gives this game a high level of excitement which can be enjoyed by all members of the family. Although Chisholm Trail can be played from the keyboard, our testing

has revealed that joysticks are almost a must to achieve the highest possible scores.

*Users-Group rating: ****

Ring Destroyer

Recently we were sent a copy of a new asteroid type space game entitled Ring Destroyer. Designed and written by Republic Software Co. in Washington, D.C., Ring Destroyer provided us with some real surprises. Available either on cassette or disk, Ring Destroyer can be played by anyone owning a 99/4 or 99/4A personal computer and an Extended Basic command module. Written in two separate versions, Extended Basic and Machine Code, Ring Destroyer is a game you will not quickly tire of.

We prefer the Machine language version (which can be executed with Extended Basic and a 32K RAM Expansion) due to the tremendous speed difference in screen graphics. The disk version of Ring Destroyer featuring a unique top score feature.

If you're into space games, and enjoy fast paced action, then Ring Destroyer is a must for you. The suggested retail price for Ring Destroyer, either on cassette or disk, is $19.95. It may be purchased directly from the Users-Group for $17.00.

*Users-Group rating: ****